CLAIMS

1.   A method for extracting a Zernike/Pseudo-Zernike moment for an input image, comprising the steps of:

5   generating a Zernike/Pseudo-Zernike moment in a predetermined quadrant on plane Cartesian coordinates;

obtaining a pixel value of the input image by projecting the input image onto the quadrant; and

multiplying each pixel value of the input image by the moment basis

10   function corresponding to the pixel position and then summing the results thereof.

2.   The method according to claim 1, wherein the step of generating a basis function comprises the steps of:

15   obtaining a moment radial polynomial according to the change in order and repetition and checking if the repetition is an even number;

generating the Zernike/Pseudo-Zernike moment basis function in the quadrant by using the symmetry of a linear function passing the origin and having an absolute value of its slope of 1, if the repetition is an even number;

20   and

generating the Zernike/Pseudo-Zernike moment basis function in the quadrant without using the symmetry as in the above step, if the repetition is an odd number.

3.   The method according to claim 1 or 2, wherein the step of obtaining a pixel value of the input image comprises the steps of:

adjusting the input image to the size of the Zernike/Pseudo-Zernike moment basis function; and

5   obtaining the pixel value of the input image by projecting the input image of which the size is adjusted onto the quadrant by using x-axis symmetry, y-axis symmetry, and origin symmetry.

4.   The method according to claim 1, wherein the predetermined

10   quadrant is a first quadrant.

5.   The method according to claim 2, wherein the linear function passes the origin and has a slope of +1 (i.e., y=x).

15   6.   A method for extracting a Zernike/Pseudo-Zernike moment for an input image, comprising the steps of:

generating a Zernike/Pseudo-Zernike moment in a predetermined quadrant on a plane orthogonal coordinates;

generating a Zernike/Pseudo-Zernike moment for all quadrants from

20   the a Zernike/Pseudo-Zernike moment basis function on the quadrant by using the symmetry of a Zernike/Pseudo-Zernike moment;

obtaining a pixel value of the input image; and

multiplying each pixel value of the input image with the moment basis function corresponding to the pixel position and then summing the results

thereof.

7. The method according to claim 6, wherein the step of generating a basis function comprises the steps of:

5   obtaining a moment radial polynomial according to the change in order and repetition and checking if the repetition is an even number;

generating the Zernike/Pseudo-Zernike moment basis function in the quadrant by using the symmetry of a linear function passing the origin and having an absolute value of its slope of 1, if the repetition is an even number;

10   and

generating the Zernike/Pseudo-Zernike moment basis function in the quadrant without using the symmetry as in the above step, if the repetition is an odd number.

15   8.   The method according to claim 6 or 7, wherein the symmetry of the Zernike/Pseudo-Zernike moment basis function is the symmetry of x-axis, y-axis, and origin.

9.   A computer readable recording medium on which a program

20   implementing the same method is recorded, comprising the functions of:

generating a Zernike/Pseudo-Zernike moment in a predetermined quadrant on a plane orthogonal coordinates in an image recognition system having a processor in order to extract a Zernike/Pseudo-Zernike moment;

obtaining a pixel value of the input image by projecting the input image

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onto the quadrant; and

multiplying each pixel value of the input image with the moment basis function corresponding to the pixel position and then summing the results thereof.

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10.   A computer readable recording medium on which a program implementing the same method is recorded, comprising the functions of:

generating a Zernike/Pseudo-Zernike moment in a predetermined quadrant on a plane orthogonal coordinates in an image recognition system

10   having a processor in order to extract a Zernike/Pseudo-Zernike moment;

generating a Zernike/Pseudo-Zernike moment for all quadrants from the a Zernike/Pseudo-Zernike moment basis function on the quadrant by using the symmetry of a Zernike/Pseudo-Zernike moment;

obtaining a pixel value of the input image; and

15   multiplying each pixel value of the input image with the moment basis function corresponding to the pixel position and then summing the results thereof.